Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 7. This sheet, which includes Fig. 7, replaces the original sheet including Fig. 7.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Under 35 U.S.C. 112, the Examiner argues that there is no common coolant circulated through the heat exchangers 118, 118a. The reference to heat removed by common coolant from the heat exchangers 118, 118a is intended to be a reference to heat being removed indirectly by the coolant supplied through the supply lines 144, 146, with the heat transfer being affected, by, for example, the first heat transfer circuit 132 including the heat exchangers 118, 134.

Firstly, to clarify the disclosure in the application, an amended Figure 7 is attached. The bottom portion of Figure 7 showing the components and the oxidant supply line are simply being amended to correspond to the corresponding components at the top of Figure 7 for the fuel supply line and also to correspond with the originally submitted, informal copy of Figure 7. As the Examiner is aware, the specification at page 9, lines 6-10 indicates that many of the elements in the two lines 90 and 92 are similar and have the same function, with those in the line 92 being designated by the suffix "a". Accordingly, no new matter has been added.

Solely to facilitate further examination, the "common coolant" concept is being rephrased. Thus, for the first or fuel process line, it is now emphasized that there is a common coolant supply lines 144, 146, which are connected to the heat exchangers 134, 164 and hence for removal of heat from the heat transfer circuits 132, 162. Correspondingly, for the oxidant line, there are heat exchangers 134a and 164a connected to the corresponding coolant supply lines 144a, 146a, for removal of heat from the two respective heat transfer circuits.

As detailed below, this aspect of the invention is also now set out in the claims. The Examiner has argued that there is no "reasonable assurance that applicant is in possession of the subject matter (namely the common coolant supply) claimed at the time of the invention"; this being a reference to a common coolant supply in the previous version of claims, common to both the fuel and oxidant lines. It is submitted that what, at a minimum, is clearly disclosed is the provision of one common coolant supply for the two heat transfer circuits for the fuel gas line, and another common

coolant supply for the two heat transfer circuits of the oxidant supply. It is applicants' position that the specification is silent on whether these two common coolant supplies are the same or different, and hence does not exclude the possibility that these two common coolant supplies could be from a single, common supply, and this would be well understood by someone skilled in the art. The claims now refer to the separate first and second common coolant supplies, and are not intended to exclude the possibility that these two coolant supplies are one and the same.

Accordingly, it is submitted that these amendments clearly deal with the rejection under 35 U.S.C. 112.

With respect to the rejection under 35 U.S.C. 103, applicants had earlier argued that it was not seen how the humidification provided by the humidifiers 2a and 2b in JP 9-35737 could in any way be reliably controlled. It seems inevitable that in this proposal, the level of humidification would depend upon numerous factors, such as flow rates of the gases, flow rate of water applied for humidification, areas of membranes, temperatures, etc. To the extent that this disclosure is understood, it is not seen how it provides any reliable and controlled level of humidification.

The Examiner cites the Fleck reference solely to argue that it is known that process gas must be introduced at a predetermined temperature and humidity; it is not seen how this statement of intent from one reference in any way means that the disclosure in another reference, the Japanese reference, will function to meet this requirement.

With respect to JP 5-256468, applicants' maintain the argument that this is non-analogous art. While this Japanese reference may be concerned with controlling humidity and temperature, this is in the context of supplying clean air for a clean room for a semiconductor manufacturer. As might be expected, it suggests that the air should be humidified to the relative humidity of 40% of the temperature of 20°C. Humidity levels in fuel cells are quite different, and PEM fuels typically operate at much higher temperatures. For example, PEM can operate at 80°C, and there are proposals to introduce different membrane materials and the like to enable them to operate at much higher temperatures. Accordingly, the operating conditions are in no way equivalent.

With respect to changes in operating conditions, it is again argued that, for semiconductor processing facilities, there is no suggestion that it would require any ability to operate a widely varying temperatures or humidities or to have the ability to change quickly between operating conditions. Indeed, the abstract of the '468 Japanese reference seems to suggest that constant temperature and uniform, relatively low humidity are desirable. In contrast, in a fuel cell environment, it can be necessary to have temperatures and humidities change relatively quickly. As the present invention is concerned with claims to the apparatus, rather than method, method-like features of changing temperature and humidity are not recited in the claims, but nonetheless a temperature and humidification apparatus, particularly for a test station or the like, must be capable of rapid response and being able to supply process gases at widely varying temperatures and humidity levels. A designer of any such apparatus or equipment would be well aware of these characteristics, and for this reason, would not find the Weitman and Japanese '468 disclosures in any way relevant.

With respect to Japanese reference '737, while this may disclose two humidifiers, it is submitted it is in no way obvious to combine this with other references, notably the JP '468 and the Weitman references. The humidification schemes in these two other references are wholly different, and it is not seen how they can be combined with the scheme in the JP '737 reference, relying on humidification of cells with membranes integral with the fuel cell stack, without significantly altering the characteristics of the primary reference so as to render it inoperable.

With respect to claims 1, 4, 5, 7-9, 11, 12 and 17-22, the Examiner rejected these claims under 35 U.S.C. 112, first paragraph. The Examiner rejected these claims on the ground that the original disclosure did not support the limitation of "first and second heat exchangers are arranged for heat to be removed there from by a common coolant supply". For the reasons given above, it is submitted that the presently submitted amendments to the claims fully address this argument and that the claims are fully compliant with 35 U.S.C. 112.

With respect to claims 4, 5, 8, 9, 11, 12 and 17-21, the Examiner additionally relied on various other references for showing additional features. Without

conceding that the Examiner's arguments are correct, it is submitted that these claims are allowable, both for introducing further patentable features and for being dependent from allowable, independent claims.

Summary of Amendment to the Claims

A number of minor amendments are being made to claim 1 of an editorial nature. For example, amendments are being made to ensure that the reference to the "first humidification unit", etc. are consistent.

The first heater is now specified to comprise a third heat exchanger, and the second heater is stated to be a fourth heat exchanger. It is then provided that for the first and third heat exchangers there is a first common coolant supply, while for the second and fourth heat exchangers there is a corresponding second coolant supply. No new matter has been added, and one can note that this language corresponds to the language of former claims 9 and 19 and the provision of a common coolant supply is as shown in Figure 7 and as discussed above.

A minor editorial changes is being made to claim 4.

In view of the amendments to claim 1, claim 7 now refers to the first common coolant supply.

In claim 9, reference to the first heater comprising a third heat exchanger is being deleted, so that this claim now simply introduces the third temperature control circuit. Correspondingly, claim 19 is being amended to delete reference to the second heater being the fourth heat exchanger (as this feature has been introduced into claim 1).

Claim 17 has also been amended so that it refers to the second common coolant supply, corresponding to the amendment to claim 1. Similarly, claim 20 has been amended to refer to the first and second common coolant supplies, and a similar amendment has been made to claim 21.

Amendment to the Drawings

Figure 7 is being amended, so that the part of the cooling circuit for the oxidant stream that corresponds with the cooling circuit for the fuel stream is now shown more fully. As noted at page 9, lines 6-10 of the specification, it is made clear that the

circuits for the fuel and oxidant gases generally correspond. Some connections to heat exchangers 118a and 134a (newly designated), corresponding exactly to the connections for the heat exchangers 118, 134, are now shown. The inlet line for the second coolant is now shown at 144a, corresponding to line 144 at the top of Figure 7. No new matter has been added.

Accordingly, early review and allowance are requested.

Respectfully submitted,

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Attachments

Annotated Sheet Showing Changes

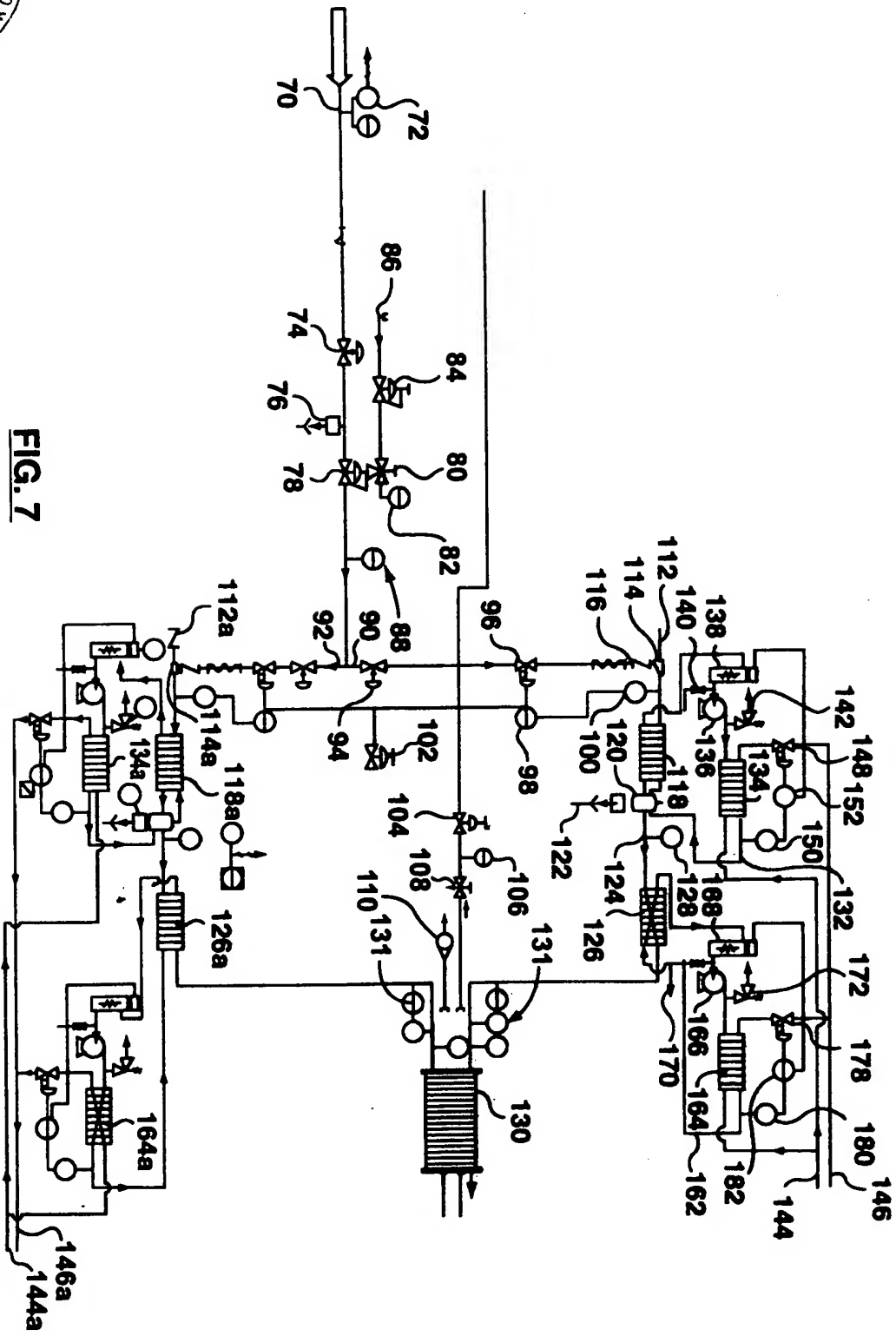

FIG. 7